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Sarka, Peter Bo; Ipsen, Christine

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Knowledge sharing via social media in software development: A systematic literature review

Abstract

Effective knowledge exchange among software developers is crucial for the competitive performance of their organizations. Today, the constant pressure on businesses to continually innovate and the increasing capability of information technologies to facilitate broader and more distributed communication are driving organizations to leverage social media tools to improve performance. These tools, which have changed the way we share knowledge, enable people to connect, communicate, and collaborate. Research on knowledge sharing via social media is still in its early phases, with a comprehensive overview of the literature yet to be completed. Thus, using a systematic literature review approach, this study aims to map the current literature on the topic in relation to software development. Furthermore, this study highlights the findings of former research and identifies gaps in the literature. The study offers several insights for researchers and practitioners and proposes a future research agenda to strengthen knowledge in the field.

Keywords: Systematic literature review, knowledge sharing, social media, software development, future research agenda.

Introduction

Social media is radically changing the technological landscape, affecting people's interactions and thus society. Communication has become fundamentally different from just two decades ago. In the early 2000s, Prensky promoted the notion that regardless of whether organizations advocate using social media, their employees, especially those among the younger generations, would increasingly adopt competences and attitudes towards sharing (Prensky, 2001). The extensive use of social media for knowledge sharing and social networking would characterize the so-called "digital natives" (Prensky, 2001; Selwyn, 2009; Deal et al, 2010; Kaplan & Haenlein, 2010), who have grown up in a sharing culture influenced by the extensive use of social media. Thus, when entering organizations, this demographic expects to meet demands and respond to experiences in a manner similar to everyday life (Carswell (2007) in Levy, 2009). Social media tools have infiltrated our society, however, in such a way that their usage can no longer be attributed solely to the younger generations (Perrin, 2015). Hence, it is necessary to examine social media usage and its accompanying challenges within current organizational settings.

According to McAfee (2010), we are currently witnessing the infiltration of many social media tools into companies (McAfee, 2010). Today, companies and employees recognize the potential of social media as an internal communications tool, and consequently, the use of social media has been rising rapidly (Black et al, 2010; Keitt et al, 2011; Sarka et al, 2014). Social media has been acknowledged as providing complementary features to traditional communication tools, such as email, phone, and video conferencing systems, which has caused it to be increasingly used for capturing and sharing knowledge (Ferro et al, 2012). These points reflect the general recognition of the potential of social media in organizations.

To accomplish work more effectively and efficiently (Fisher & Fisher, 2001), companies often now globally distribute their organizational processes (Bertoni et al, 2012), which means that members of an organization must deal with both spatial (location) and temporal boundaries (different work hours) (Fisher & Fisher, 2001; Cummings et al, 2009) when communicating via information technology (Bell & Kozlowski, 2002; Grabowski & Roberts, 2016). Kotlarsky and Oshri (2005) argue that organizational mechanisms that create social spaces between people are required in order to achieve successful collaboration, especially among globally distributed teams (Kotlarsky & Oshri, 2005). Software development is a highly collaborative activity wherein communication and knowledge sharing are necessary to meet the needs of users and stakeholders. The need for supporting tools is particularly well recognized in the software development field, where jobs are conducted among different locations (Kraut & Streeter, 1995; Espinosa et al, 2007). Knowledge sharing can be defined as providing or receiving knowledge, know-how or feedback concerning a given product or procedure (Hansen et al, 1999). Knowledge sharing provides people with an

understanding of the knowledge and skills of others, and allows them to respond to situational demands given complex tasks potentially beyond their cognitive skill level (Szulanski, 2000). Knowledge sharing also includes the implicit and social coordination mechanism of knowledge (Faraj & Sproull, 2000).

Given that knowledge sharing is a vital part of the everyday life of a software developer, knowledge sharing activities are highly important to implement so as to ensure speed, innovation, and effectiveness. It is integral for software development organizations to focus on the social creation and distribution of knowledge, as their knowledge workers are currently attempting to solve problems of a different magnitude than in prior decades (Bertoni et al, 2012). As the scope of organizational activities rapidly develops, software developers share and utilize a wider array of data, information, and knowledge than has previously been available in traditional organizational contexts. Along with the increasing globalization, technological innovation makes organizations more reliant on information communication technologies (ICT) (Bertoni et al, 2012).

Today's generation of developers frequently make use of social media to support their collaborative environment (Begel et al, 2010; Storey et al, 2010). Social media includes a broad and fast growing variety of tools, such as blogs, RSS, wikis, social networking platforms, instant messaging (IM), gaming, and more. According to Farkas (2007), social media refers to anything that meets two out of three following conditions: I) tools that allow people to communicate, collaborate, and build communities online, II) tools that can be syndicated, shared, reused, remixed, or facilitate syndication, and III) tools that let people learn easily from and capitalize on the behavior or knowledge of others (Farkas, 2007). Kaplan and Haenlein (2010) describe social media as a group of internet-based tools that build on the ideological and technological foundations of Web 2.0, and that allow for the creation and exchange of user generated content (Kaplan & Haenlein, 2010). This paper apply these two definitions and the term "social media" is used broadly to denote a group of products and services that enable social interactions in the digital realm.

As part of individuals' daily tasks, social media can help to connect people to new knowledge and experiences rather than well-known and potentially redundant ones (Bertoni et al, 2012). In doing this, social media can help developers to more effortlessly and effectively develop the 'know what' (Ryle, 1984), 'know-how' (Ryle, 1984), and 'know-who' (Larsson, 2005) needed to achieve their objectives. Social media also presents unprecedented prospects for communication between employees by creating opportunities for instant cross-boundary and cross-functional communication, facilitating knowledge sharing that bridges time and space (Cummings et al, 2009). It also helps to establish relationships and knowledge repositories that were formerly unavailable to employees. Furthermore, different kinds of social media have different characteristics to offer. For example, wikis serve as platforms for idea exchange, discussion [HZZ07], and

general knowledge sharing [WW11], while IM is often used as a real-time glue between different communication and collaboration channels [DG11]. Moreover, social media raises awareness of and simplifies knowledge sharing through lightweight tools (Giuffrida & Dittrich, 2013).

Social media has introduced a dramatic change to the software developer landscape and old assumptions are challenged (Storey et al, 2014). Today, software developers openly contribute to online knowledge creation and the recognition of social connectedness is gaining increasing attention (Storey et al, 2014). Social media is seen as an extremely important developer resource that provides updatable documentation and high quality answers as well as dialogue opportunities (Treude et al, 2011). Having improved response time significantly compared to traditional communication methods (Mamykina 2011), social media is unavoidable for software developers. The outcome is a shift in work processes, and the wish to communicate face-to-face is challenged by many-to-many communication (Storey et al, 2014). However, whereas some perceives social media to provide a larger user community than accessible by traditional communication tools (Squire 2015), concerns are also raised regarding information overload and quality assessment (Squire 2015, Storey et al, 2014). Thus, social media is creating novel preconditions and expectations for software developers to adhere to.

The rapidly growing interest in social media across various research fields necessitates an overview of the current research on the topic. However, research on knowledge sharing via social media related to software development is still in its early stages and initial engagement with the literature in this field revealed it to be confusing and scattered. There are many disparate conceptualizations of social media (Richter et al, 2011), and the literature is often vague and dispersed (Gancho et al, 2013). Despite the field's lack of an overview (Storey et al, 2010), a growing interest in social media and their potential offerings was evident in the literature. The literature showed identifications that the field could be facing rapidly game-changing development and many studies popped up in different and scattered settings. As the introduction of social media to the general discussion on computer supported cooperative work (CSCW) is somehow still novel and emerging, the field has not reach a mature state with common references and a general valid background knowledge database. Therefore, this paper conducts a systematic literature review (SLR) of existing research literature on knowledge sharing via social media in relation to software development. This review can be used to identify possible gaps in the literature so as to inform future research agendas and generally improve research within the field.

Method

Given, that software development is one of the most mature and advanced fields in terms of social media usage for work purposes, it offers a comprehensive foundation for the analysis and comparison of novel

technologies. This SLR is part of a research project that is exploring how social media is used to share knowledge within the field. Corresponding with the main research topic of the project at large, the primary inquiry of this review relates to how social media can support knowledge sharing activities.

This review follows a five-step approach (Denyer & Tranfield, 2009). This approach allows for comprehensive coverage of the literature and ensures auditability and repeatability for future searches. Figure 1 illustrates the five steps, which the following sections detail.

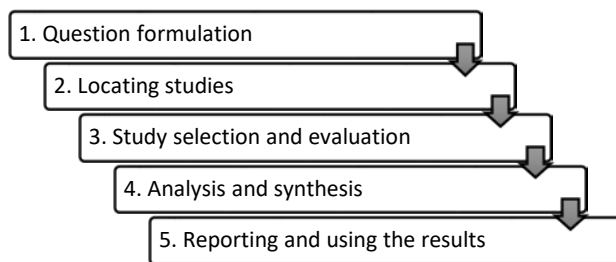


Figure 1 - Overview of the five-step systematic literature review approach

Question formulation

In the first step of this review's approach, the research questions to guide the review were formulated. A clear research question is critical to provide focus and direction to an SLR. The main research question was established via discussions between the authors and colleagues within the knowledge sharing field. The research question was formulated using the following CIMO logic (Denyer et al, 2008).

Context: Software development teams.

Interventions: The use of social media tools in software development projects.

Mechanisms: Knowledge sharing activities.

Outcomes: Usage of social media for knowledge sharing in software development.

This logic represents a comprehensive background to map the landscape of the social media literature within the scope of this paper.

Research Questions

To examine the current state of research on knowledge sharing via various social media tools, the following primary research question was formulated:

How does social media support knowledge sharing activities in the field of software development?

This question is supported by two sub-questions:

1. How are social media reported to be used for knowledge sharing activities by software developers?

2. How is knowledge sharing via social media being researched?

Locating studies

This systematic review aims to locate, select, and appraise as much of the relevant research as possible related to the research question (Denyer & Tranfield, 2009). This second step of the review's approach involves the creation of a comprehensive search string to ensure the identification of all relevant studies. Following this, relevant databases to conduct the search within will be identified.

Search string

An automatic search of electronic databases was conducted using a broad and comprehensive search string. The search string included a combination of three sets of keywords that related to social media, the subject, and the discipline. These three sets of keywords were used to construct a search string with the Boolean operators AND and OR.

{Social Media} **AND** {subject} **AND** {discipline}

The final search query is shown in Table I.

Table I – Keywords and search terms used in the search string

Social media	Subject	Discipline
"social media" OR	"knowledge sharing" OR	"software engineering" OR
"social software" OR	"knowledge transfer" OR	"software development" OR
"social technolog*" OR	"knowledge distribution" OR	"IT development" OR
"social network*" OR	AND "computer-mediated communication" OR AND	"software quality" OR
"web 2.0" OR	"computer-mediated collaboration" OR	"software testing" OR
"social bookmark*" OR	"computer supported co-operative work"	"software architecture" OR
"social tagging" OR		"requirement engineering" OR
"social platform*" OR		"requirement specification" OR
"social web tool*" OR		"quality assurance"
"social web" OR		
"user generated media" OR		
"user generated content" OR		
"instant messaging" OR		
"online discussion forum*" OR		
"Q&A" OR		
wiki* OR		
Facebook OR		
Twitter OR		
blog* OR		
microblog* OR		
SharePoint OR		
Yammer		

The above definition of the search terms ensured the identification of a list of studies that would be both broad enough to recall a sufficient quantity of references and precise enough, given increasing amounts of information, to eliminate unnecessary material (Duff, 1996).

Databases

The second key decision to make is to choose which search engines to use. First, pre-known databases were explored to identify if they contained publications within the field of study. Second, databases used in other review studies within the same field were identified. Third, an experienced reviewer who has conducted comprehensive acknowledged literature reviews (e.g. Heisig, 2009) within similar fields scrutinized the list of identified databases, and a final list of seven databases was agreed upon. Given that the context of the study is knowledge sharing via social media in the field of software development, these databases were identified to provide the best coverage of the field. In some cases, a certain study identified through Scopus were not identified through the direct database (e.g., Science Direct, EBSCO), despite the

study being placed within this database. This enhances the rationale for choosing several different types of databases for the search. The selected databases with identified studies were Scopus (2.381), Science Direct (317), Springer Link (18), Association of Computing Machinery (ACM) (717), EBSCO (29), Web of Science (237) and The Institute of Electrical and Electronics Engineers (IEEE) (536).

Study selection and evaluation

All identified studies were exported to the reference management software package Refworks (Refworks). First, the software was used to eliminate duplicates. Then, a screen based on the relevance of the title of the studies to the research questions identified papers relevant for a more in-depth review of the abstract, and subsequently, the full paper. Relevant studies were selected using explicit inclusion and exclusion criteria (Table II).

Table II - Criteria for including and excluding identified studies

Criteria	Rationale
<i>Inclusion criteria</i>	
Papers in peer reviewed journals, conference papers, working papers, workshop proceedings, editorials and reviews	The field of social media is experiencing increasing attention. However, it is still an emerging field, and excluding works-in-progress such as conference papers and working papers could leave out important research.
Papers must have social media and knowledge sharing as a main theme	The focus of the research is to study knowledge sharing through social media.
Papers must focus on software development or related fields	The aim of the research is to explore and map the current state of studies on knowledge sharing via social media related to software development.
Selection of papers will be open to any time frame	The field has developed significantly in recent years, but some parallels can be drawn to earlier papers.
Theoretical papers, empirical papers, and review papers, either qualitative or quantitative	Different approaches have contributed to the field of study.
<i>Exclusion criteria</i>	
Papers related to topics where the focus is not on knowledge sharing and social media	Many papers focus on other ways to share knowledge, but the focus in this study is on knowledge sharing via social media.
Papers related to fields not comparable to software engineering	Many papers focus on other fields (e.g., education and healthcare).
All studies in any other language than English or Danish	These languages are the ones that can be read by the review researchers.

When identifying studies within the same body of research or the predecessors of another identified study, only the most complete or newest version was retained. The removal of duplicates, and subsequently, those studies on the first screen (based on the relevance of the title to the research question) resulted in the retention of 565 studies for a more in-depth review of the abstract. Selection was then carried out by first reviewing a study's abstract and afterwards reviewing the full papers that were selected based on their abstracts. A total of 459 studies were rejected predominantly due to a review of their abstracts, with some rejections based on a review of full papers, leaving a total of 106 studies remaining.

Table III shows the selected databases and the corresponding number of identified objects based on the search string.

Table III - Databases and number of studies identified 8 March 2015

Databases	No. of studies	No. of studies left after screening of titles	No. of studies left after screening of abstracts	No. of studies left after screening of full papers
Scopus	2.381	210	36	24
Science Direct	317	13	0	0
Springer Link	18	1	0	0
Association of Computing Machinery (ACM)	717	178	76	37
EBSCO	29	5	2	2
Web of Science	237	55	14	14
The Institute of Electrical and Electronics Engineers (IEEE)	536	103	29	29
Total	4.235	565	157	106

Analysis and synthesis

A summary of the information contained in each paper was prepared in spreadsheet format organized in terms of descriptive, methodological, and thematic categories (Table IV). The descriptive and methodological analyses were more deductive in nature and focused on the categorization of the identified studies by year, journal, title, paper type, etc. A more inductive approach was taken for the thematic analysis, which analyzed and mapped the discussion in research studies of knowledge sharing via social media in the field of software development. The goal of this was to identify emerging constructs related to different social media tools for knowledge sharing, as well as to identify gaps in the literature and future research agendas. Two authors coded the data independently to ensure inter-coder reliability (Cho, 2008). Where views differed, issues of disagreement were discussed between the authors until resolved (Miles & Huberman, 1994).

Table IV - Categories used in extracting and analyzing data from the identified studies

Area	Category	Rationale
Descriptive	Authors	Name of author(s)
	Title	Complete title of the paper
	Year	Year of publication
	Journal	Journal in which it was published, book section or conference proceedings, etc.
	Country	Country where the research was conducted
	Place of publication	Country where the research was published
Methodology	Method used	The method used to conduct the research.
	Paper type	Analytical, empirical, or a literature review.
	Paper format	Journal paper, Conference paper, etc.
Thematic	Type of social media	The type of social media studied.
	Theme	The focus of the research (e.g. motivation, communication, collaboration, etc.)
	Level	The level of focus (e.g. organization, group, individual, etc.)
	Findings	The main findings of the paper related to the topic of investigation.
	Other	Any other information presented in the study that is relevant to this research.

After recording the data from the studies, quantitative and qualitative analyses were conducted. From these analyses, characteristics and findings were identified according to the objectives and research questions of this review.

Findings and discussion

From the SLR, 4235 studies were initially retrieved. The SLR was performed on the 8 March 2015, with the initial set of studies limited to papers being published at that time. As mentioned prior, the removal of unrelated studies resulted in the final retention of 106 studies, which constituted the final set of studies analyzed in this review. A complete reference list is available in Appendix A.

Overview of studies

Figure II shows the type of social media discussed in the studies identified in this review. It clearly shows that wikis are the most comprehensively researched type of social media, seconded by social networks.

Additionally, as the popularity and importance of social media has increased, research has begun to focus on the general use and impact of social media.

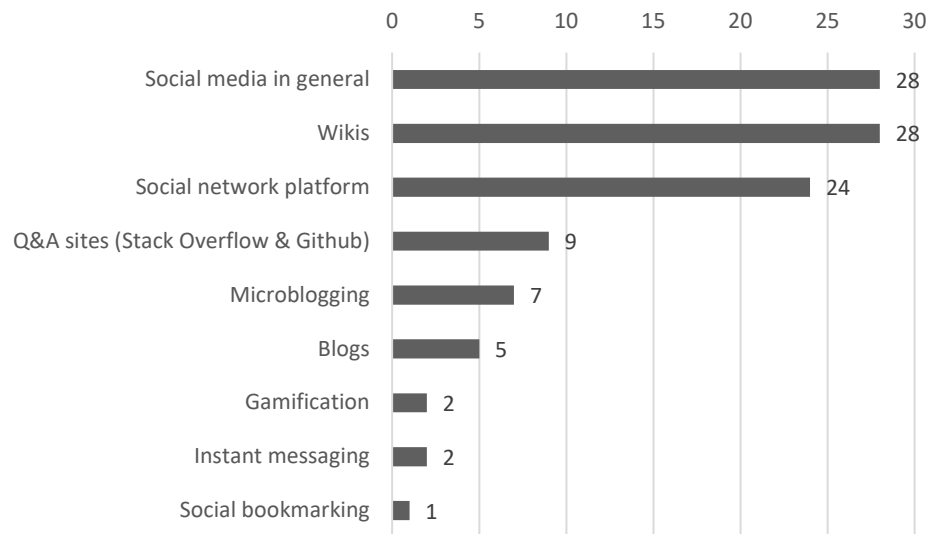


Figure II Number of studies for each type of social media

The results here are considerably different compared to Guiffrida and Dittrich (2013), who found that IMs were clearly the most studied social media tool. Their study addressed the general use of social media in global software development. IM is a tool to communicate short messages in a fast and simple manner, with the ability to reach out to others for quick answers to specific problems during a development activity. However, while IM is widespread within the field of software development, the fact that this specific type of social media is the focus of only two of the identified studies in this review shows that IM is not considered a viable tool for knowledge sharing.

The distribution of the final set of 106 studies is presented in Table V by year. The findings illustrate the most comprehensively studied types of social media in relation to knowledge sharing. The table clearly indicates that research on knowledge sharing via wikis and social networks has been taking place for roughly a decade. Wikis have been the focus of many studies and research in this field, reaching a high in 2010 and 2011. Aside from a single exception, blogs and IMs were the focus of social media research in relation to knowledge sharing up to roughly 2010-11, following which there appears to have been a shift in focus. The findings of this review show that, after 2010-11, research on social media became more widespread and specific, likely due to the introduction of new tools and their increased popularity and usage. This also indicates a growing interest in social media for knowledge sharing and the acknowledgement of its potential benefits.

Table V - Distribution of studies regarding each type of social media by year

Social media	Year										
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Wikis		3	2	2	4	7	7	2	1		
Social media in general			1	3		6	5	2	8	3	
Social network platform	1	1	3	2	3	3	3	4	3		1
Q&A sites (Stack Overflow & GitHub)							2	2	3	2	
Microblogging							1	1	3	2	
Blogs				1	1	2			1		
Gamification							1			1	
Instant messaging						1	1				
Social bookmarking				1							

The findings reveal that social media in general has received significant research attention since 2010. However, aside from wikis and social networks, there is a current lack of research on specific social media tools for knowledge sharing. We are currently witnessing a more widespread focus of research within the field, but there seems to be a demand for even further investigation of the potential of more specific social media tools.

In a big global study knowledge management (KM) experts stated that research in the relationship between KM and technological enablers often is retroactive and tries to make KM fit into a former defined theme (Sarka et al, 2014). This study seems to confirm this in relation to social media. That is, as social media becomes implemented in companies, researchers begin to change their focus toward these tools. Therefore, certain tools are only seriously researched after they become mainstream (Giuffrida & Dittrich, 2013). The findings of this review show that researchers are only beginning to recognize the need to focus on newer aspects of social media and their specific functions, rather than offer comprehensive general discussions. Gamification, Q&A sites, and microblogging, along with many other aspects of social media, have been part of the field's toolbox for many years now. Such features are already well implemented and used in the everyday life and the work processes of companies throughout the world. Despite this, however, research is only beginning to focus on these areas. Due to the rapid technological development within the field of social media, tools are constantly updated and quickly outdated, putting research in danger of being outdated even before it is published.

It should be noted that this study's literature search was conducted in March of 2015, and therefore, not all papers published in 2015 were included in this review. Only a single paper from 2015 was found to be relevant to this review. However, under normal circumstances, the tendency shown in Table V would most likely follow the same pattern for 2015.

Research methods

This review investigated how the different identified studies were conducted. The adopted research methods of these studies include a great mixture of quantitative and qualitative methods, as well as case studies. In addition, many studies have combined quantitative and qualitative methods to complement each other. This indicates a great mixture of research on knowledge sharing via social media, which ensures a more broad and accurate picture of the field (see Figure III). One particular method that appears to be overlooked in the studies is that of observations. While the many case studies all include activity logs and log content analysis, there is a lack of observational studies, which could provide new findings on the relationship between social media and knowledge sharing.

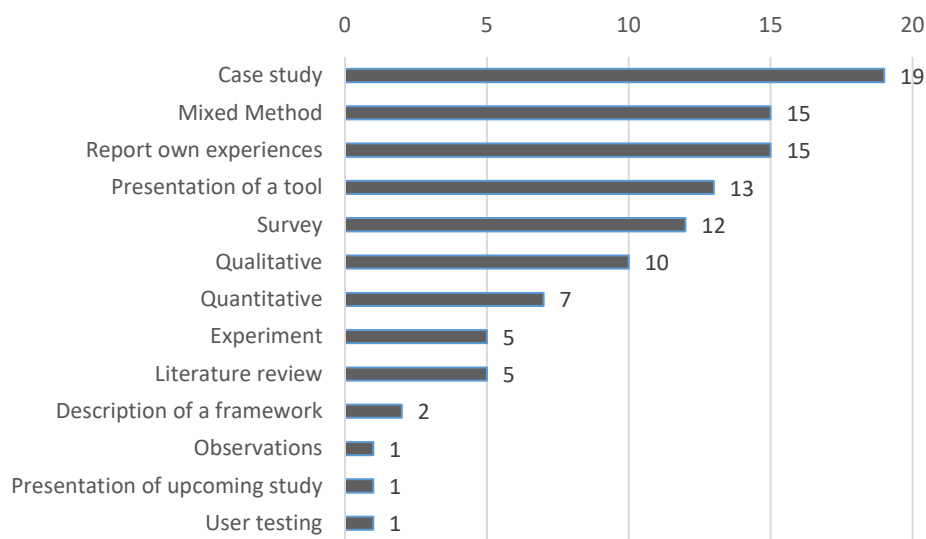


Figure III Research methods adopted

The vast majority of the identified studies in this review used an empirical approach (see Figure IV). Roughly a quarter of the studies were purely analytical, and only four literature reviews were identified. As mentioned prior, research within the field of social media for knowledge sharing is still developing, especially given more recent additions and developments. Therefore, there may not be a comprehensive body of data for conducting a literature review at this time, which is suggested by the fact that only four review were identified in this study.

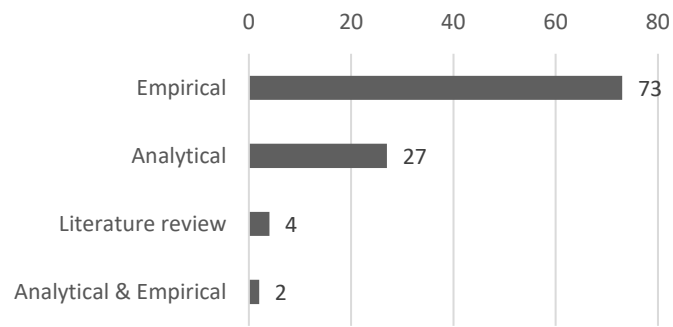


Figure IV - Distribution of paper types

Type of research

This review also investigated how research within social media for knowledge sharing is being presented. Figure V shows that the preferred way to publish research within the field is via conference papers. Certain of these studies may have only qualified as conference papers, and thus were not developed further into journal papers. However, there might be another explanation as well. As mentioned prior, the technology within social media is rapidly changing and developing. In combination with a comprehensive and time consuming review process of journals this makes a very bad match. Therefore, sometimes it is preferred to use conferences to present ideas and research and it is not seen as worthwhile to go into the process of making a paper publishable for a giving journal. This is a challenge that needs to be dealt with within the research community. As social media research often focuses on the potential for fast and easy knowledge sharing, immediate collaboration across spatial and temporal boundaries, etc., perhaps some of these ideas and methods are suitable for advancing the publication process as well.

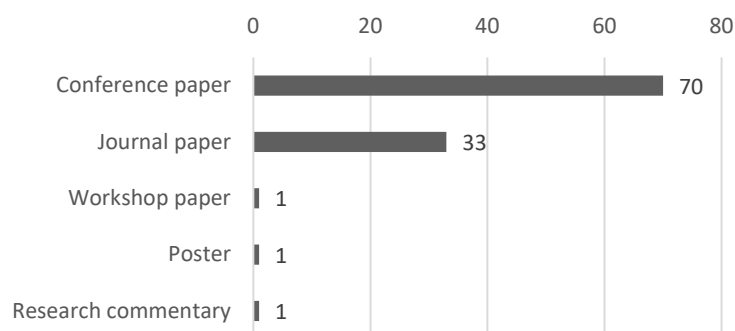


Figure V - Distribution of paper formats

Usage of social media

A large portion of the studies identified in this review deal with collaboration and communication, which is to be expected, as social media is generally regarded as a communication tool that enables collaboration.

Moreover, a considerable amount of the studies place focus on KM activities and knowledge sharing. Together, these four categories account for more than 60% of the entire set of studies (see Figure VI). A great distribution is seen in the remaining themes, including motivation, general usage, and information sharing as the most represented. The diversity of themes helps to develop a more comprehensive understanding of the field. However, further studies are required on more minor topics, such as barriers, innovation, and success factors, to establish broad conclusions. As social media is known to be vital to socializing, it is surprising to find that only a few studies have investigated themes such as trust and socialization processes.

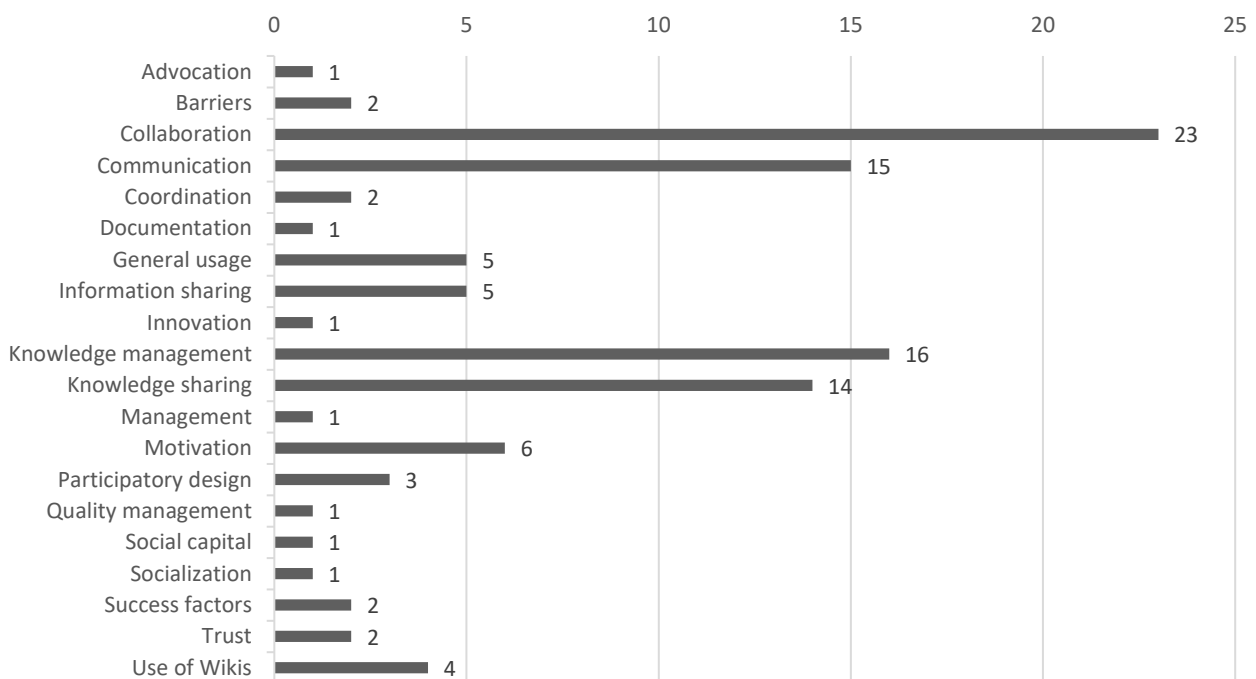


Figure VI – Themes

Another absent theme is implementation. Social media has been recognized for its communicative and collaborative potential and is expected to increasingly expand from the private sphere into companies. However, the question of how companies should prepare and act in order to ensure the successful implementation of social media is not present within the studies identified in this review.

Research perspective

An organizational focus is most commonly used in the selected studies. More than half of the entire set of studies investigate the impact, potential, etc., from an organizational perspective (see Figure VII). In these studies, the focus is, for example, on how organizational processes are affected by social media, or how social media can contribute to improve them.

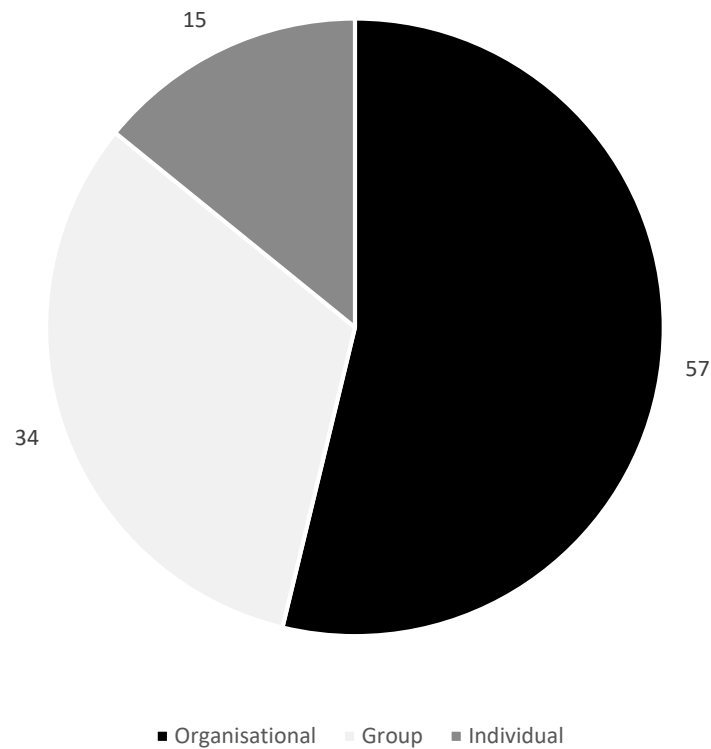


Figure VII – Research perspective

The main portion of the remaining studies focus from a group perspective on the processes, for example, within a single development team or department. Hence, these studies are more narrowly defined.

The last group of studies focus on the individual. However, these amount to as little as 14% of the entire set of studies. These studies focus on, for example, participation in online communities [CTA09], how usability information is shared [BHC08] and discussions on Q&A sites [TBS11], [BYH14]. The majority of the studies in this group focus on how social media is used, and hence do not examine how social media affects the work processes of a single individual or their accompanying impacts. Very few studies touch upon factors such as motivation [HL07], [PTS13], [VSDF14], trust [AVHPM11], or work performance and value [CVGLG12]. This review reveals a tendency in research within knowledge sharing via social media toward investigating the subject from a general perspective, with a lack of focus on the impacts at the individual level. This conclusion is supported in [STDC10] where they proposed ten research questions that seek to understand the implications of social media related to software development. However, only one of these questions addresses impacts on an individual level (i.e. interruptions and information overload).

Future research

In this section, gaps in the current published studies on knowledge sharing via social media are gathered to assist future research agendas.

More tool or function specific research:

Research on knowledge sharing via social media is characterized by a general approach. Therefore, additional studies on specific tools and processes will help to achieve a more comprehensive understanding of these different tools/functions and their related benefits and challenges.

More prospective research:

Research within this field is struggling to keep up with rapidly changing technological development, with findings potentially becoming outdated before being published. Thus, there is a need for more prospective research. Furthermore, changes may be necessary to the extensive process of submission to publications, such as increasing the speed of this process, or the establishment of completely other ways of publishing academic material. Perhaps certain aspects of social media could be used in this process.

Lack of observational studies:

Surprisingly few of the identified studies included observations of social media use for knowledge sharing. Many of the case studies use content log analysis or something similar, but it appears advisable to complement existing research by taking a step back and concentrate some additional efforts on understanding the scattered practices. However, this could interfere with the goal of being prospective. Therefore, there is also a need to use observations to create suggestions and/or understandings for future use of social media for knowledge sharing.

Lack of implementation studies:

As noted prior, implementation is not discussed in any of the identified papers in this review. Thus, more research on the successful introduction of social media for knowledge sharing in companies is needed to advance an understanding and knowledge of the field.

Lack of focus on the individual:

One of the major research gaps on knowledge sharing via social media identified in this review is a lack of focus on the individual. More than 85% of the studies focus at the organizational or group level. For a more comprehensive and adequate understanding and knowledge of the field, it is necessary to concentrate more research on the impact of social media use on the individual.

Addressing the above stated areas will not only increase knowledge within the field, but also aid in enhancing the available support for both researchers and practitioners.

Conclusion

The systematic literature review (SLR) presented in this paper aimed at providing a comprehensive overview of studies focused on knowledge sharing via social media, as well as identifying gaps in the literature to assist future research agendas.

Social media is typically used for collaboration, KM, communication, and knowledge sharing. The majority of published papers within the field are empirically-based and in the format of conference papers. Wikis, social media in general, and social network portals are the most studied tools. Research addressing more specific and new types of social media for knowledge sharing will not only provide more information on the field, but will also increase support available for software developers who currently use or are considering using such tools.

Social media is constantly developing, and therefore research struggles to keep up with its progress. Thus, there is a need to be more prospective and to decrease the duration of the review processes. Furthermore, observational studies and research of implementation of social media will add to existing research and improve available knowledge in the field.

The individual is surprisingly absent in the identified studies of this review, which primarily focus on general impacts and benefits at the organizational level. Increased attention should therefore be given to the effects of knowledge sharing via social media at the individual level so as to gain a better and all-encompassing understanding of how these technologies can be effectively utilized.

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